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HONG KONG RENAL REGISTRY

Hong Kong Renal Registry Report 2012

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KEYWORDS
hemodialysis (HD);
peritoneal dialysis (PD);
Renal Registry;
renal replacement therapy (RRT);
renal transplant

Summary This report examined the characteristics and trends of dialysis and renal transplant patients among the resident population of Hong Kong who were managed by hospitals or dialysis centers of the Hospital Authority, and accounted for approximately 95% of all patients receiving renal replacement therapies (RRTs) in the territory. Patients receiving RRTs solely in the private sector were not included in this report. Data trends from 1996 to 2011 are presented. In 2011, 1115 new patients were accepted into RRT programs, and the incident rate was 157 patients per million populations (pmp). An increasing trend was noted. The incident rate was 95.1 pmp at the commencement of the annual report in 1996. The point prevalence on December 31, 2012 was 8197 with a prevalence rate of 1152.5 pmp. Overall, there were 3573 patients (43.6%) on peritoneal dialysis (PD) and 1246 patients (15.2%) on hemodialysis (HD), and 3378 patients (41.2%) were living with a functioning renal transplant. The PD/HD ratio was 74.2:25.8. The "PD First" policy was continued. The overall mortality rate among RRT patients was 9.95 patients per 100 patient-years exposed. There was a decreasing trend in mortality among PD patients. Infection and cardiovascular complications were the most common causes of death. Renal transplant was the modality with the best survival rates. The 5 years cumulative patient survival rate for

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patients on transplant treatment was 89.6%, whereas the corresponding patient survival rates for PD and HD patients were 50.7% and 55.7%, respectively. More than 70% of RRT patients with reports on rehabilitation were active and had normal daily activities.

本報告旨在審查在香港地區之透析及腎臟移植患者的狀況，這些患者均是香港居民，接受香港醫院管理局轄下的醫院或透析中心所提供的治療，約佔當地腎臟替代療法 (RRT) 總病人數目的九成半，僅在私營醫院接受 RRT 的患者並不包括在本報告之內。以下是 1996 年至 2011 年的數據趨勢。在 2011 年，共有 1115 名新患者被納入 RRT 服務計劃，發生率為每百萬人口 157 人 (pmp)，比較在 1996 年的年度報告中發生率為 95.1 PMP，有增加的趨勢。截至2012年 12 月 31 日，點盛行個案為 8197，而患病率為 1152.5 pmp。當中有 3573 患者接受腹膜透析 (PD，43.6%)，1246 患者接受血液透析 (HD，15.2%)，以及 3378 名患者接受腎臟移植後繼續存活 (41.2%)。PD 與 HD比例為 74.2：25.8，持續了優先採用腹膜透析治療之政策。RRT 患者的整體死亡率為每 100 患者-年 9.95 人。PD 患者的死亡率呈下降趨勢。感染和心血管併發症是最常見的死亡原因。接受腎移植患者的存活率為最高，5年累計之存活率達 89.6%，相對 PD 和 HD 患者之存活率分別為 50.7% 和 55.7%。超過七成的 RRT 患者能維持正常的日常生活。

Introduction

This report was based on the data (up to December 31, 2011) of dialysis and renal transplant patients from the Renal Registry of the Hospital Authority (HA) of Hong Kong. Approximately 95% of all patients who received renal replacement therapy (RRT) in the territory were under the HA, and patients who received RRT and followed up solely in the private sector were not included in this report. There are 12 renal units, two satellite centers, and four renal transplant clusters in Hong Kong (Table 1).

First implemented in April 1995, the Renal Registry is an online registry with data entered directly through Clinical Management System computer terminals in wards or clinics under the HA or through dedicated computer terminals in renal units where patient data from individual renal units can be retrieved and saved for service planning and patient management use. The registry provides the necessary information for the HA head office in RRT service planning as well as resource allocations. Because data are entered online and renal units can update the data of their patients at any time, there might be minor discrepancies in the Figures retrieved during different periods.

The Renal Registry is part of the Organ Registry, Transplant Systems (ORTS) and is linked with other computer systems: the Organ Procurement System and the Transplantation and Immunogenetics Laboratory System for organ procurement, HLA mapping, as well as organ allocation in deceased donor renal transplantation.

The Renal Registry collects data from hospital dialysis and transplant programs on patients from their first RRT treatment for end-stage renal disease (ESRD; i.e., dialysis or transplantation) to their death, unless they were lost to follow-up. Only treatments provided in Hong Kong under the HA were included in this report. Data were on a calendar-year basis (January 1 to December 31).

Table 1 Renal centers and transplant clusters in Hong Kong.

Hospital clusters	Renal and satellite centers
Hong Kong West	• Queen Mary Hospital • Tung Wah Hospital
Hong Kong East	• Pamela Youde Nethersole Eastern Hospital
Kowloon Central	• Queen Elizabeth Hospital • Yau Ma Tei Satellite Center
Kowloon East	• United Christian Hospital • Tseung Kwan O Hospital
Kowloon West	• Princess Margaret Hospital • Kwong Wah Hospital • Yan Chai Hospital • Caritas Medical Center
New Territories East	• Prince of Wales Hospital • Alice Ho Miu Ling Nethersole Hospital • Northern District Hospital
New Territories West	• Tuen Mun Hospital • Tuen Mun Ambulatory Dialysis Center
Transplant cluster hospitals	
Queen Mary Hospital Cluster	• Queen Mary Hospital • Tung Wah Hospital • Pamela Youde Nethersole Eastern Hospital • Kwong Wah Hospital
Queen Elizabeth Hospital Cluster	• Queen Elizabeth Hospital • Yau Ma Tei Satellite Center • United Christian Hospital • Tseung Kwan O Hospital
Princess Margaret Hospital Cluster	• Princess Margaret Hospital • Yan Chai Hospital • Caritas Medical Center • Tuen Mun Hospital • Tuen Mun Ambulatory Dialysis Center
Prince of Wales Hospital Cluster	• Prince of Wales Hospital • Alice Ho Miu Ling Nethersole Hospital • Northern District Hospital

Incident rates of RRT patients

In the year ending December 31, 2011, there were 1115 newly diagnosed patients with ESRD who were accepted into RRT programs. The incidence rate was 156.96 patients per million populations (pmp). There was a decrease in

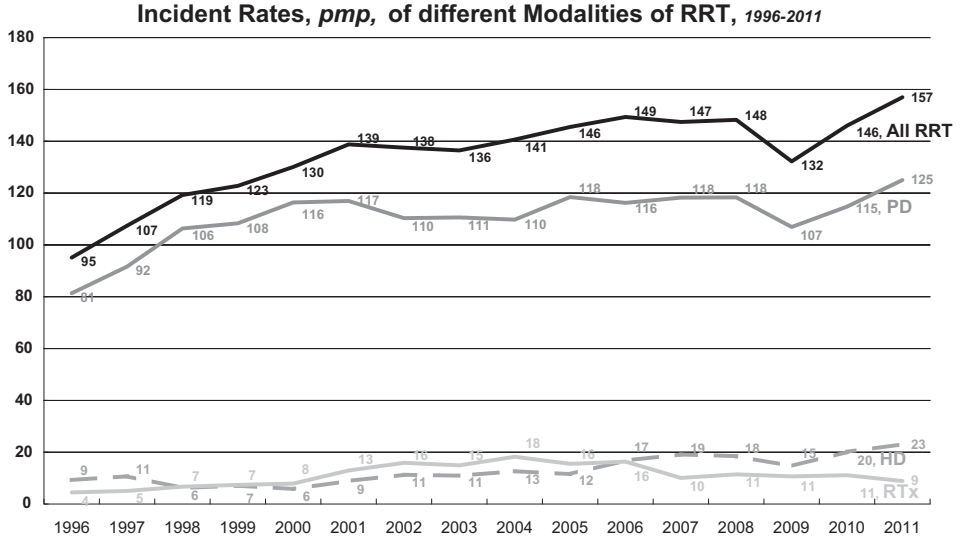


Figure 1 Incident rates (per million population) by calendar year of patients accepted into renal replacement therapy (RRT) programs, 1996–2011. All = all patients on renal replacement therapy; HD = hemodialysis; PD = peritoneal dialysis; RTx = renal transplant.

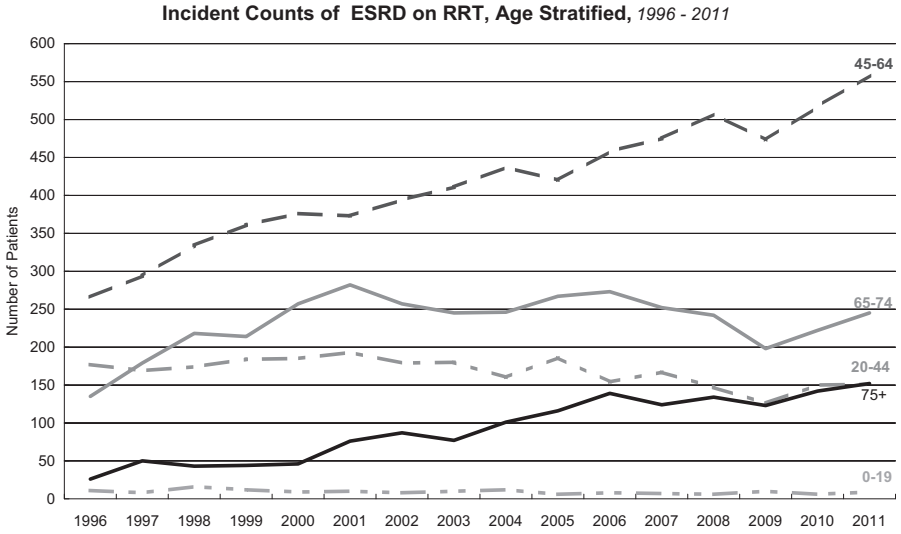


Figure 2 Age-stratified trends in incident counts by calendar year, 1996–2011.

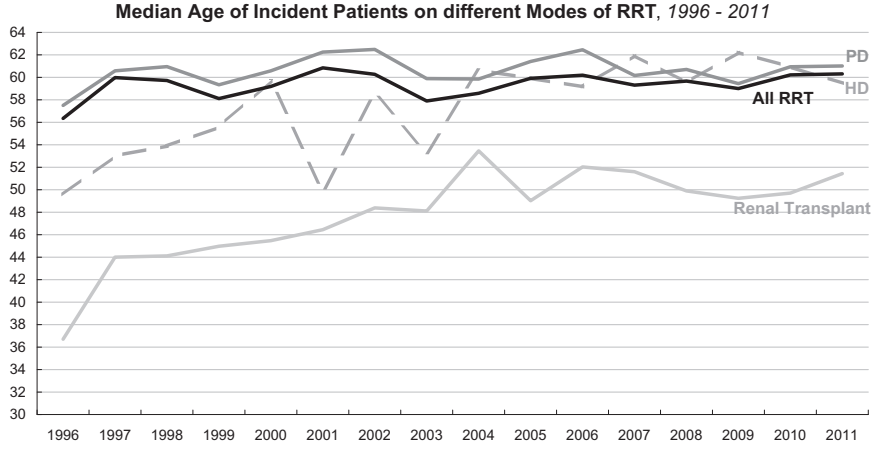


Figure 3 Trends in median age for incident renal replacement therapy (RRT) patients, 1996–2011. HD = hemodialysis; PD = peritoneal dialysis.

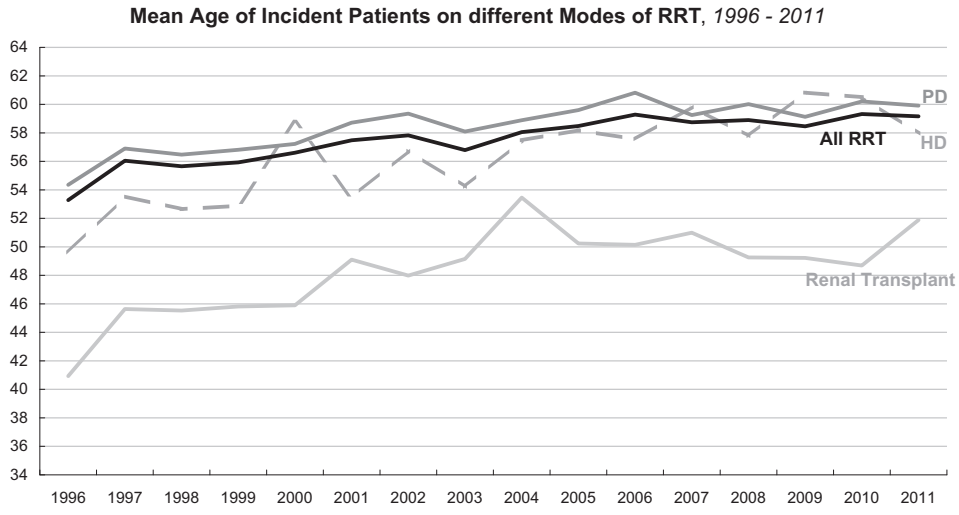


Figure 4 Trends in mean age for incident renal replacement therapy (RRT) patients, 1996–2009. HD = hemodialysis; PD = peritoneal dialysis.

the number of patients accepted into RRT programs in the year 2009, but the trend resumed an increasing pattern in subsequent years (Fig. 1). The commencement of the promotion in advance care planning and supportive care for patients who did not accept RRT was likely to be the cause for the reduction in incident count and rates in 2009, but the increasing trend advanced further in the year 2011.

In 2011, the mean and median age for incident RRT patients were 59.2 and 60.3, respectively, whereas those for incident PD patients were 59.9 years and 61.0 years, respectively. There were increasing trends in incident patient groups aged 45–64 years and 75+ years, whereas rates for the other age groups were steady (Fig. 2).

The mean and median age for incident patients on PD, HD, and renal transplant were gradually increasing (Figs. 3 and 4, respectively). This was in line with the increase in population age in the territory. There were more male patients accepting RRT, especially among the patients who received preemptive renal transplant (Fig. 5). The trend in male dominance in incident patients has remained steady since 2001.

Diabetes mellitus (DM) remained the most common primary etiology leading to ESRD, and the acceptance of diabetic patients into RRT programs increased from 26.2% in 1996 to 46% in 2011. They were generally older, with median and mean age of incident diabetic patients recorded as 62.6 years and 62.3 years, respectively. Glomerulonephritis accounted for 17.8% of the primary etiology. Hypertensive and other vascular causes were responsible for 11.7% (Fig. 6), and the trend was increasing.

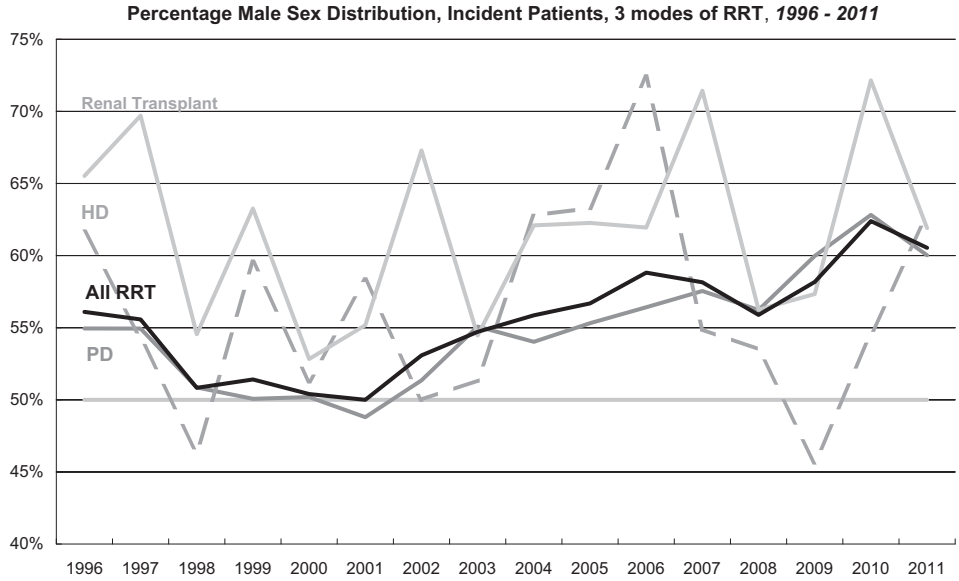


Figure 5 Sex distribution: percentage distribution of males in incident patients, 1996–2011, among the three modes of renal replacement therapy (RRT). HD = hemodialysis; PD = peritoneal dialysis.

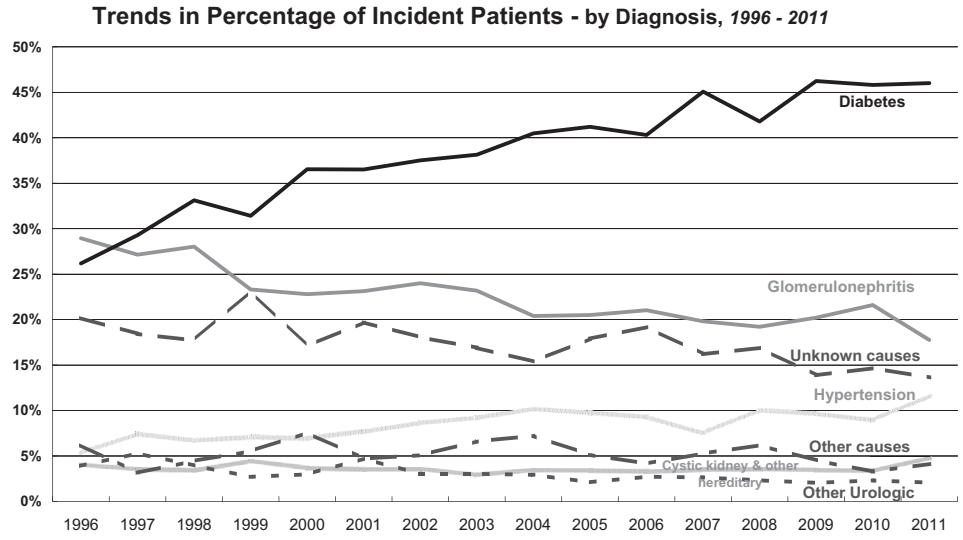
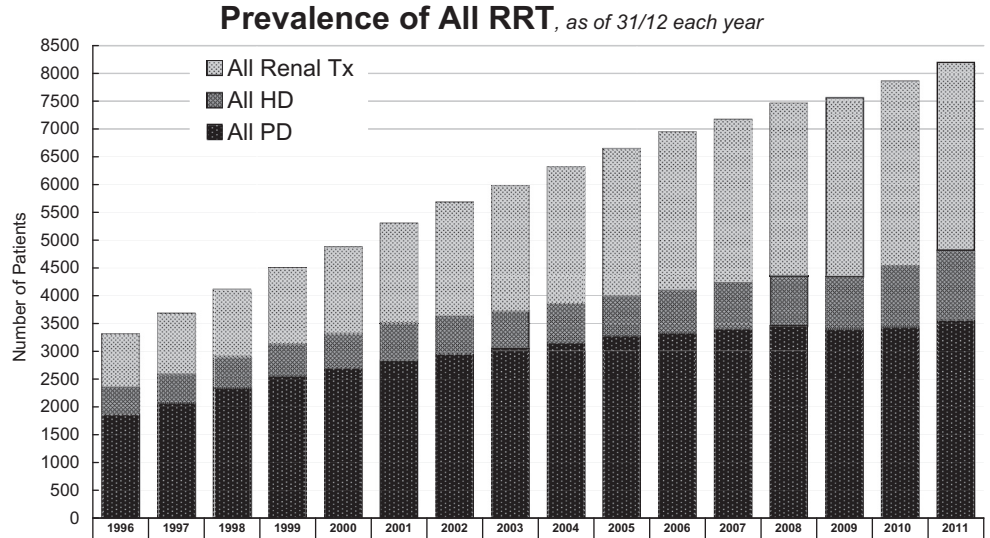


Figure 6 Diagnosis distribution (% incident counts) of patients, 1996—2011.

Point prevalent of patients on RRT

As of December 31, 2011, 8197 people were registered in the Renal Registry on RRT treatment, of which 3573 (43.6%), were receiving PD treatment, 3378 (41.2%) were living with a functioning kidney transplant, and 1246 (15.2%) were receiving HD (Fig. 7). The prevalence rate of RRT as of December 31, 2011 was 1152.5 pmp. There was an increasing trend in prevalence rates from 1996 to 2011, and the prevalence of HD patients under the HA had increased significantly since 2010 (Fig. 8). The rate of increase in prevalent patients with functioning renal allograft had



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
All Renal Tx	956	1088	1202	1361	1554	1795	2048	2255	2462	2653	2835	2923	3095	3234	3320	3378
All HD	491	524	572	582	618	656	672	670	695	714	780	842	903	945	1100	1246
All PD	1865	2069	2338	2555	2705	2850	2961	3054	3161	3279	3328	3406	3462	3401	3437	3573

Figure 7 Trends in point prevalent distribution of renal replacement therapy patients registered in the Hong Kong Renal Registry as of December 31 of each year from 1996 to 2011.

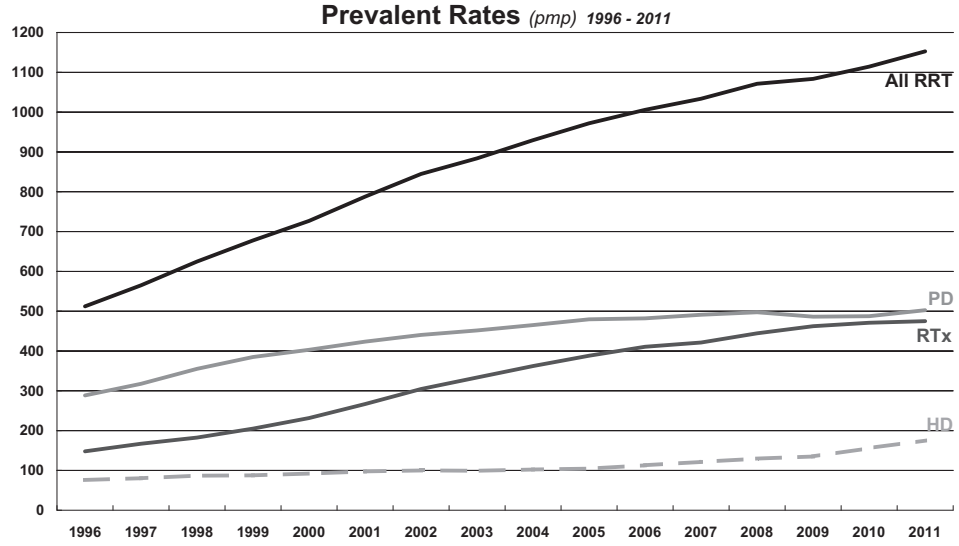


Figure 8 Trends in prevalent rates (per million population) of renal replacement therapy (RRT), 1996—2011. HD = hemodialysis; PD = peritoneal dialysis; RTx = renal transplant.

slowed down, whereas PD resumed an increasing trend in 2010—2011.

The profile of prevalent ESRD patients in Hong Kong had gradually changed over time. At the end of 2011, the largest proportion of RRT patients were receiving PD (43.6%), but the proportion was decreasing among the three modes of RRT (Fig. 9) with an increasing proportion of patients with functioning renal transplant. In 1996, 28.9% of RRT patients were having functioning renal transplants. The proportion increased to 41.2% in 2011. There was also an increase in the provision of HD service in the territory since 2009, from 12.5% in 2009 to 15.2% in 2011. In addition to HD service provision by HA centers, a proportion of patients receiving HD at charitable as well as private centers are followed up at HA renal units.

The HD/PD ratio among dialysis patients increased from 19:81 in 2006 to 25.9:74.1 in 2011 (Fig. 10). When examining the dialysis treatment under HA centers only, the ratio was 16.1:83.9 in 2006 and changed to 21.7:78.3 in 2011 (Fig. 11).

Peritoneal dialysis

The PD First policy was maintained. As of December 31, 2011, a total of 3573 patients were on various types of PD treatment with a prevalence rate of 502.4 pmp, comprising 74.1% of the dialysis population or 43.6% of all RRT patients. The majority of PD patients received continuous ambulatory peritoneal dialysis (CAPD, n = 3219; 90.1%; Fig. 12). Moreover, the proportion of patients on automated PD (continuous cyclic peritoneal dialysis, n = 157, 4.4%; nocturnal intermittent peritoneal dialysis, n = 197, 5.5%) had increased steadily in the past 5 years (Fig. 13). By

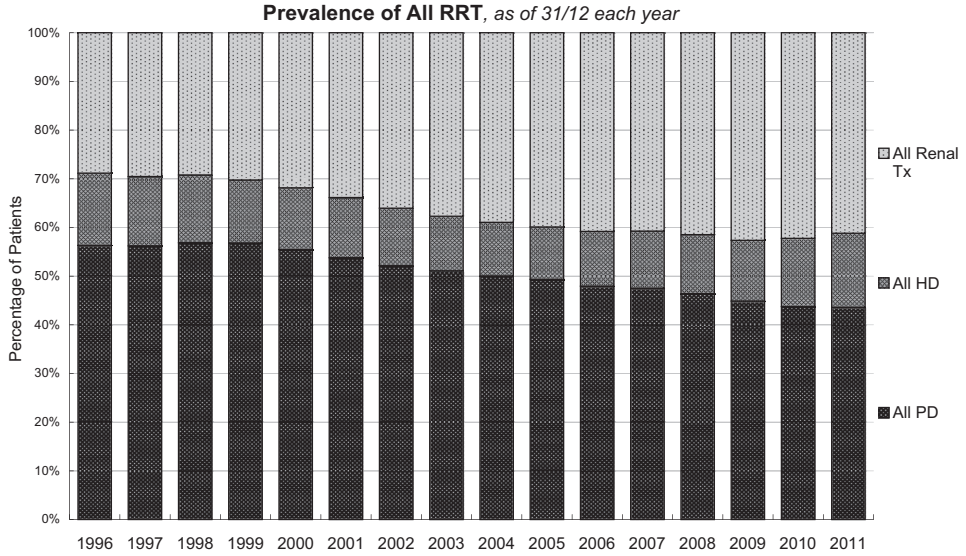


Figure 9 Trends in percentage distribution of point prevalence in renal replacement therapy (RRT), 1996—2011. HD = hemodialysis; PD = peritoneal dialysis; RTx = renal transplant.

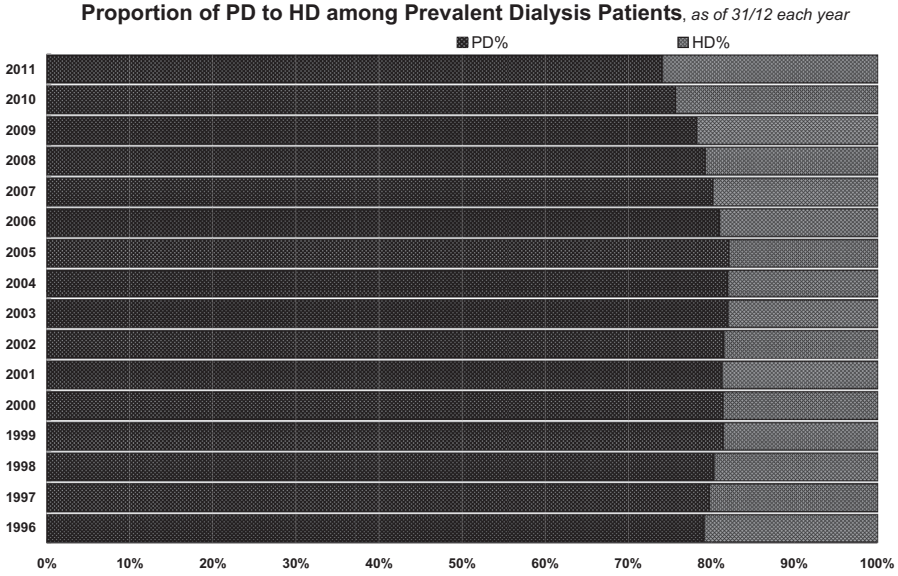


Figure 10 Peritoneal dialysis/hemodialysis (PD/HD) ratio for all registered patients in Hospital Authority, including HD in charitable and private centers, 1996—2011.

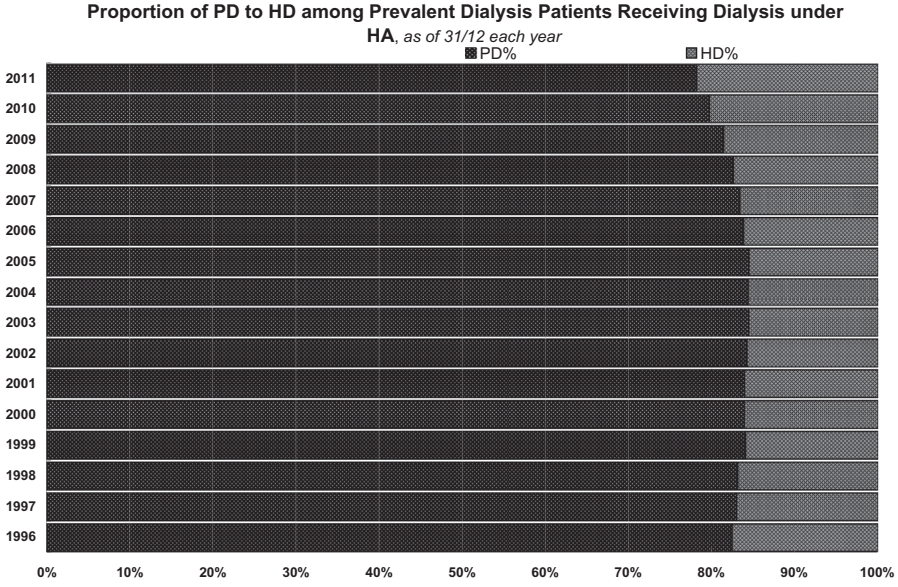


Figure 11 Peritoneal dialysis/hemodialysis (PD/HD) ratio for dialysis patients in Hospital Authority centers, 1996—2011.

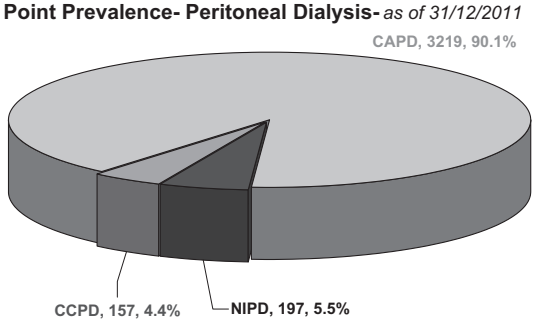


Figure 12 Distribution of different types of peritoneal dialysis (PD) as of December 31, 2011. CAPD = continuous ambulatory PD; CCPD = continuous cyclic PD; NIPD = nocturnal intermittent PD.

contrast, the number of CAPD patients had a negative growth in the year 2009 but resumed a rising trend in the past 2 years. From the year 2000 onward, there was gradual switching from connecting PD system to disconnect systems. By 2009, all patients on PD were on disconnect systems.

Hemodialysis

There was a steady increase in the provision of HD service to support patients who failed in PD treatment. The trend was further increased with the reintroduction of home femodialysis in the form of nocturnal home hemodialysis (Fig. 14). As of December 31, 2011, 725 patients (60.7%) were on regular HD in hospital settings under the HA, 76

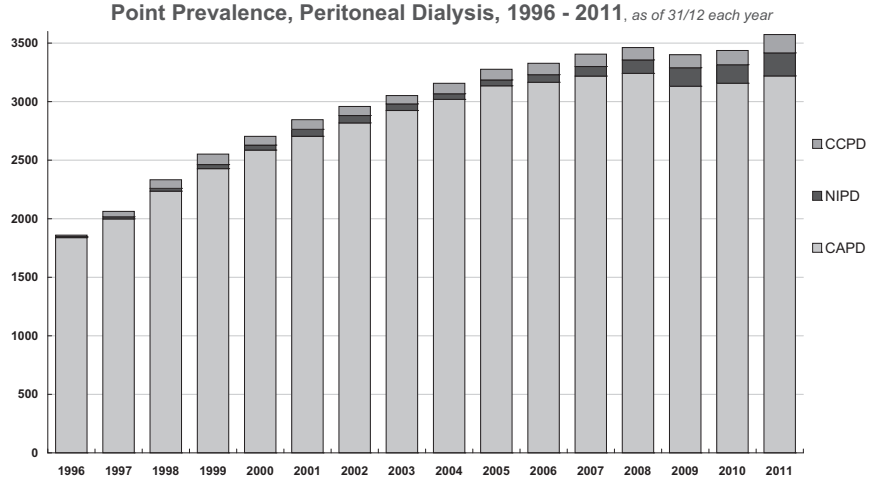


Figure 13 Trends (prevalent counts) in the different types of peritoneal dialysis (PD), 1999—2011. CAPD = continuous ambulatory PD; CCPD = continuous cyclic PD; NIPD = nocturnal intermittent PD.

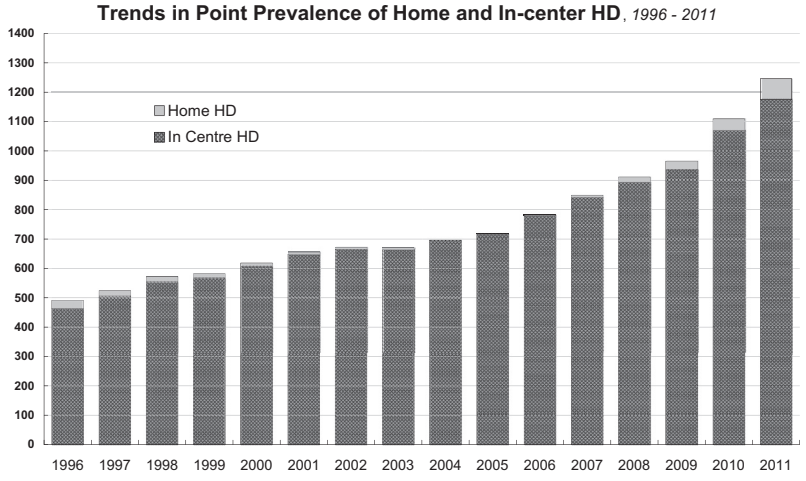


Figure 14 Trends (prevalent counts) of in-center hemodialysis (HD) and home HD, 1996—2011.

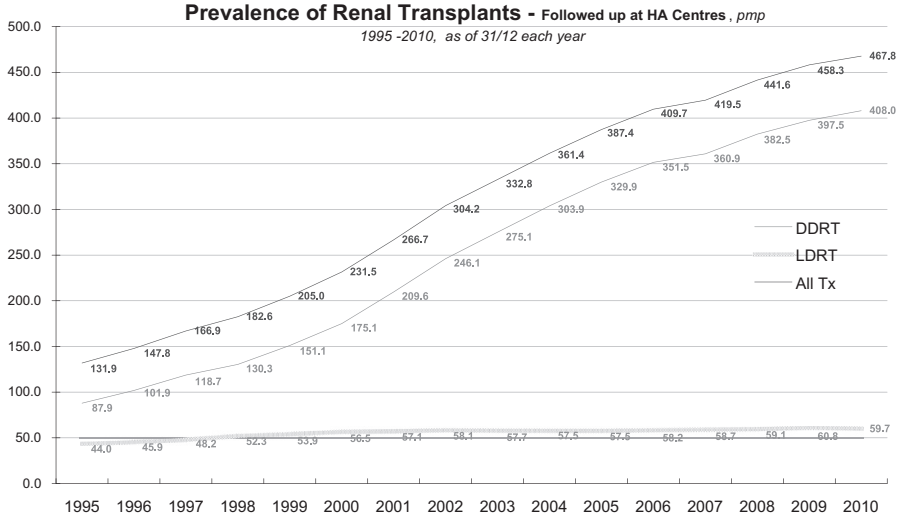


Figure 15 Trends (point prevalence, per million population) in renal transplantation, 1996—2011. DDRT = deceased donor renal transplantation; LDRT = living donor renal transplantation.

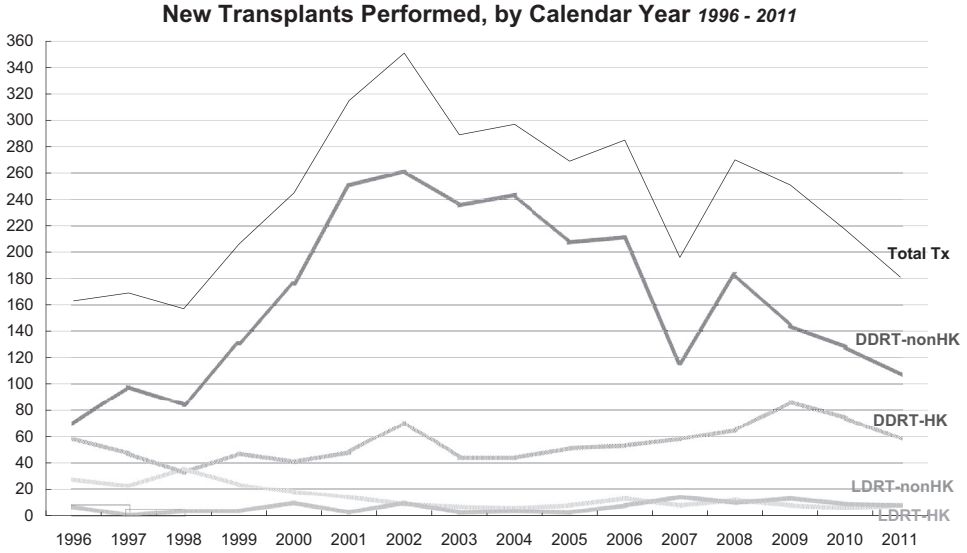


Figure 16 Trends in new transplant stratified by the type of transplant and the place where the transplant operation was performed, 1996—2011. DDRT = deceased donor renal transplantation; HK = Hong Kong; LDRT = living donor renal transplantation.

individuals (6.1%) were on HD at satellite centers, 89 patients (7.1%) received HD treatment under a collaborative public—private program, 71 individuals (5.7%) were on home HD, and 254 patients (20.4%) were dialyzed at charitable or private HD centers. The prevalence of HD was 175.2 pmp, comprising 25.9% of all dialysis patients or 15.2% of all RRT patients.

Kidney transplantation

The prevalent count of patients with functioning renal allograft continued to rise (Fig. 15), but the proportion among RRT patients decreased in the past 2 years (Fig. 9) comprising 41.2% of RRT patients with a prevalence rate of 474.9 pmp. Two years ago (in 2009), they were 42.7% and 462.2 pmp, respectively, whereas 10 years ago (2001), they were 33.9% and 266.7 pmp, respectively. Among the 3378 patients with functioning graft on December 31, 2011, 1081 patients (32%) underwent transplantation in Hong Kong, whereas other transplants were performed overseas. Of the transplants done in Hong Kong, 739 (68.4%) were deceased donor renal transplants (DDRTs) and 342 (31.6%) were living donor renal transplants (LDRT).

In the year ending December 31, 2011, 181 patients commenced transplant treatment, of which 58 were DDRTs procured among HA hospitals. There was a decreasing trend in deceased donor kidney transplant in recent years resulting in a reduction in the proportion of functioning transplant among prevalent RRT patients (Fig. 16). Commissioned training on living donor transplant was organized in January 2011; the workshop on LDRT conducted later in the territory resulted in an increase in the number of LDRTs, and the increase persisted in the year 2012. Moreover, owing to activities that promoted organ donation, the number of DDRTs done in Hong Kong had increased to 84 in the year 2012.

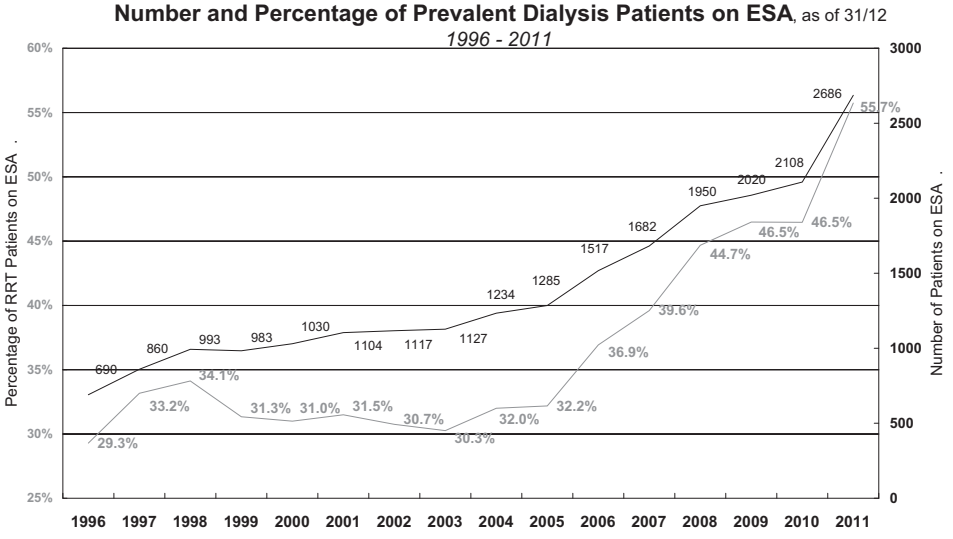


Figure 17 Trends in the number and percentage of dialysis patients on erythropoietin (EPO), 1996—2011.

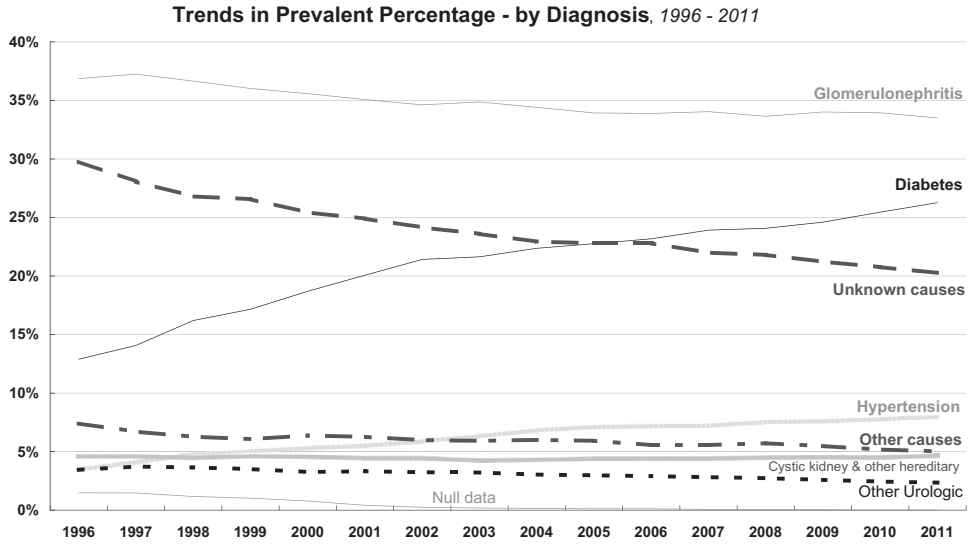


Figure 18 Distribution (% prevalent patient counts) of primary diagnoses, 1996—2011.

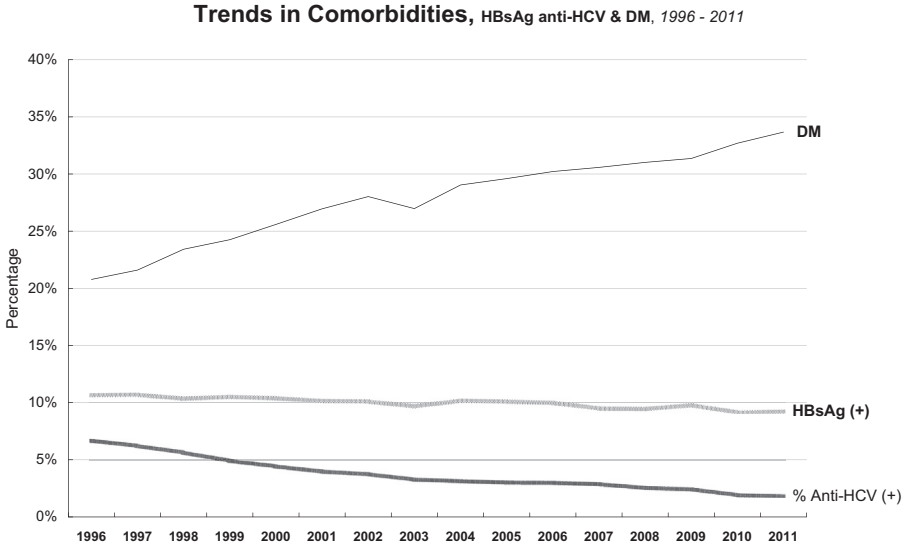
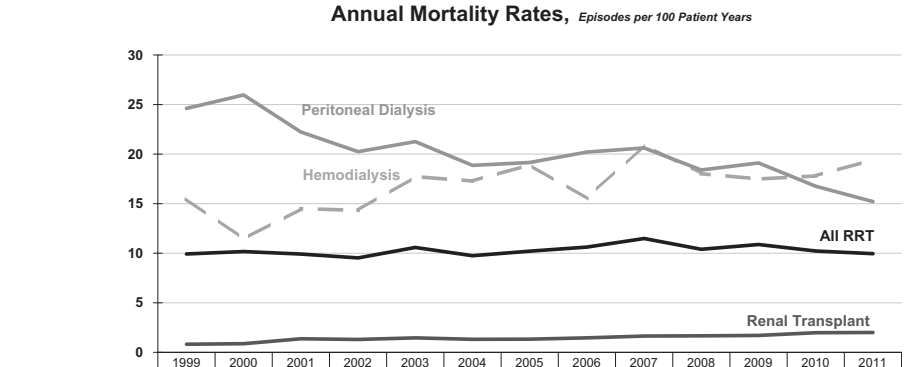


Figure 19 Comorbidities (hepatitis B virus, hepatitis C virus, and diabetes mellitus) among prevalent patients, 1996—2011.



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Renal Transplant	0.81	0.87	1.37	1.30	1.46	1.31	1.33	1.46	1.64	1.67	1.70	1.98	2.00
[1]Hemodialysis	15.49	11.40	14.50	14.33	17.73	17.27	18.94	15.49	20.93	18.03	17.49	17.80	19.45
Peritoneal Dialysis	24.61	25.97	22.23	20.24	21.26	18.86	19.15	20.20	20.62	18.39	19.11	16.75	15.21
All RRT	9.93	10.16	9.92	9.53	10.58	9.75	10.20	10.62	11.48	10.40	10.88	10.22	9.95

Figure 20 Annual mortality rates per 100 patient-years, 1999—2011. HD = hemodialysis; PD = peritoneal dialysis; RRT = renal replacement therapy; RTx = renal transplant.

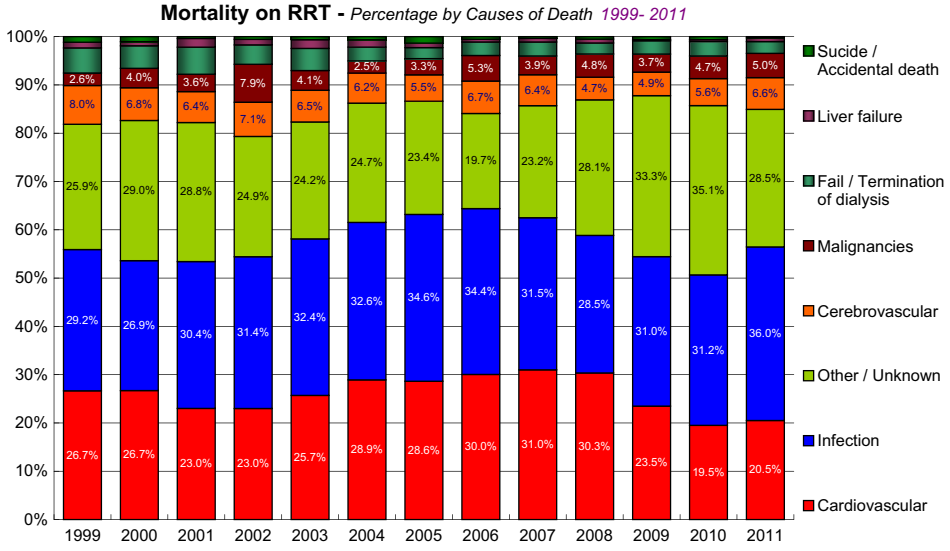


Figure 21 Trends in cause of death for all renal replacement therapy patients, 1999—2011.

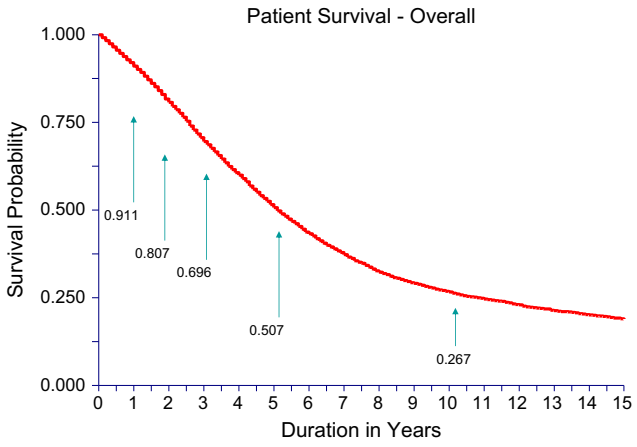


Figure 22 Patient survival in peritoneal dialysis patients, 1995—2009.

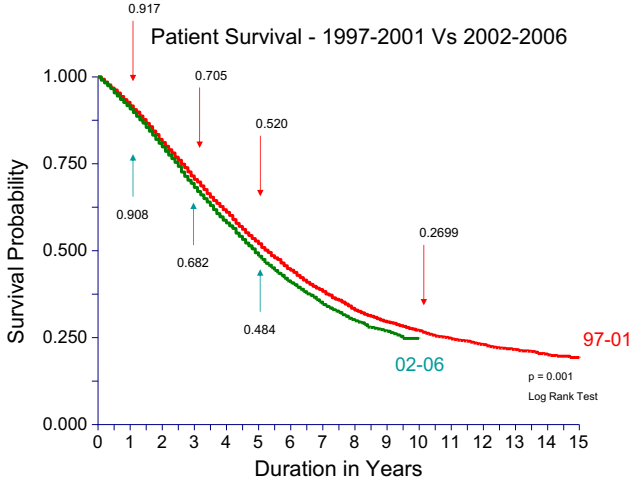


Figure 23 Patient survival in peritoneal dialysis patients, 1997—2001 vs. 2002—2006.

Erythropoietin

The number of patients placed on erythropoiesis stimulating agents (ESAs) had increased steadily throughout the years. In 1996, only 29.3% of dialysis patients were reported to be on ESAs. With the improvements in funding, 2686 of 4819 (55.7%) dialysis patients were on ESA treatment (Fig. 17). On December 31, 2012, the number of patients on ESAs was 3104.

Diagnosis and comorbidities

The pattern of disease and comorbidities changed with the changing environment and aging community. Diabetes is currently the leading primary diagnosis among incident ESRD patients. In prevalent patients, the proportion of diabetes and hypertension increased from 12.9% and 3.6%, respectively, in 1996 to 26.3% and 7.9%, respectively, in 2011 (Fig. 18). The proportions of other diagnoses were similar throughout the years. The prevalence of hepatitis C virus carrier continued the decreasing trend from 6.7% in 1996 to

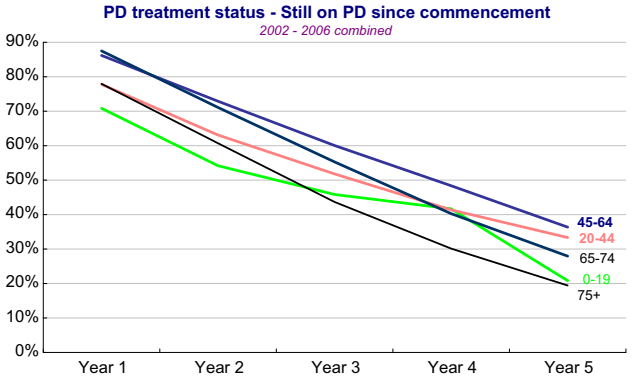
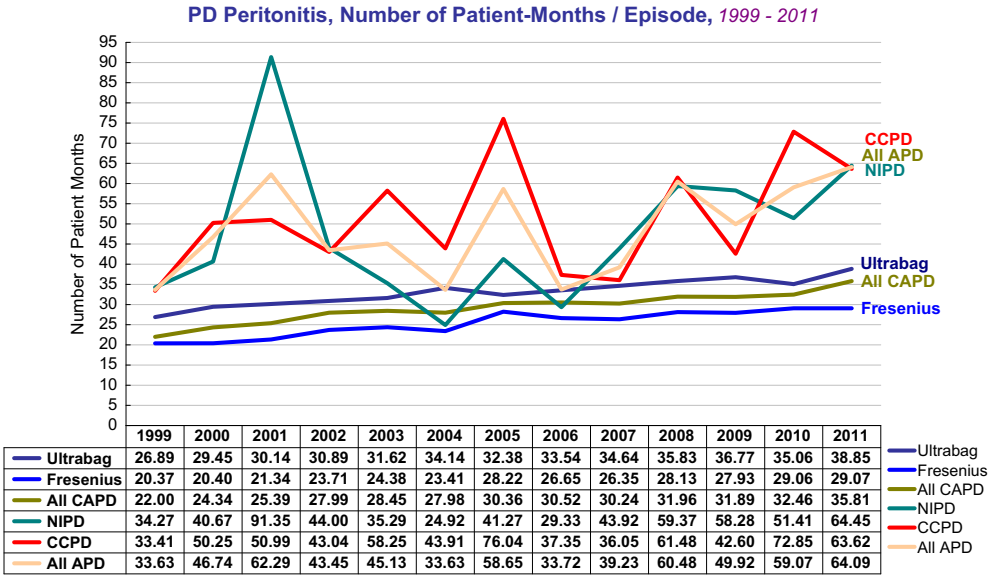


Figure 24 Peritoneal dialysis (PD) treatment status, still on PD 1—5 years after PD commencement, 2002—2006 combined.



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Ultrabag	26.89	29.45	30.14	30.89	31.62	34.14	32.38	33.54	34.64	35.83	36.77	35.06	38.85
Fresenius	20.37	20.40	21.34	23.71	24.38	23.41	28.22	26.65	26.35	28.13	27.93	29.06	29.07
All CAPD	22.00	24.34	25.39	27.99	28.45	27.98	30.36	30.52	30.24	31.96	31.89	32.46	35.81
NIPD	34.27	40.67	91.35	44.00	35.29	24.92	41.27	29.33	43.92	59.37	58.28	51.41	64.45
CCPD	33.41	50.25	50.99	43.04	58.25	43.91	76.04	37.35	36.05	61.48	42.60	72.85	63.62
All APD	33.63	46.74	62.29	43.45	45.13	33.63	58.65	33.72	39.23	60.48	49.92	59.07	64.09

Figure 25 Trends in peritoneal dialysis (PD) peritonitis rates (patient-months per episode), 1999–2011. APD = automated PD; CAPD = continuous ambulatory PD; CCPD = continuous cyclic PD; NIPD = nocturnal intermittent PD. Ultrabag is a disconnect system by Baxter and Fresenius = Stay Safe and Andydisc and Stay Safe Balance combined.

1.9% in 2011, and the prevalence of hepatitis B virus carrier was 9.3% in 2011, a percentage close to the prevalence rate of the population. Diabetes as comorbidity (including DM as primary etiology of ESRD and DM coexisted with the primary etiology) was also rising among prevalent patients; it increased from 20.8% in 1996 to 33.7% in 2011 (Fig. 19).

Outcomes

Annual mortality rates were calculated by counting the number of deaths divided by the person-years exposed. The mortality rates of patients on PD, HD, and renal transplant were 15.21 deaths, 19.45 deaths, and 2.00 deaths per 100 patient-years, respectively, in the year 2011. The overall mortality rate was 9.95 deaths per 100 patient-years, which was steady throughout the years despite an aging RRT population.

There was a decreasing trend in mortality in PD patients, whereas the mortality of transplant recipients had increased in the past 3 years (Fig. 20). Better dialysis care and patients' choices on either dialysis or supportive management might be the reasons behind the improvements. The increasing trend in mortality among HD patients and transplant recipients might reflect the increasing number of elderly patients who switched to HD after PD failure or received renal transplant.

Cardiovascular, infection, and unknown causes were the most common causes of deaths. The proportion of "unknown" causes of death decreased in 2011, whereas

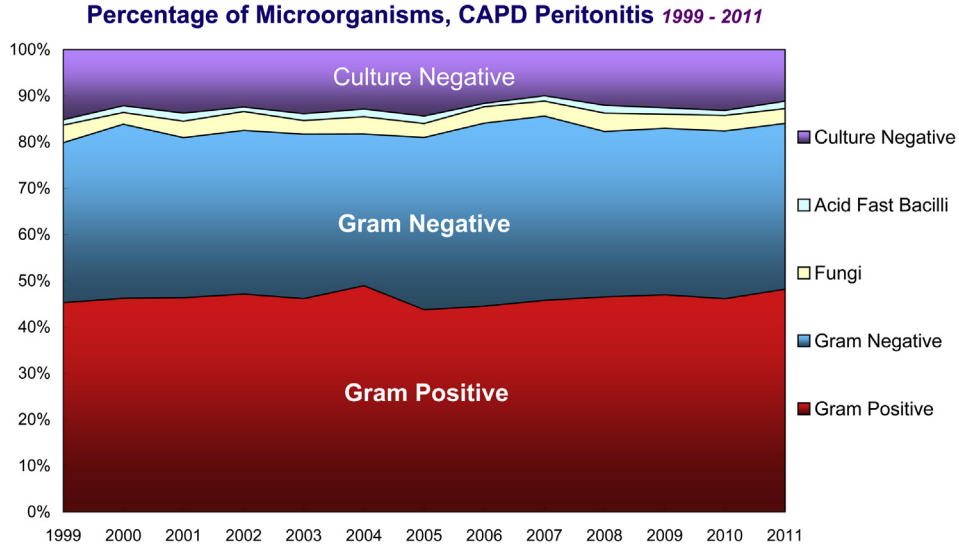


Figure 26 Trends in causative microorganisms of peritonitis due to continuous ambulatory peritoneal dialysis, 1999–2011.

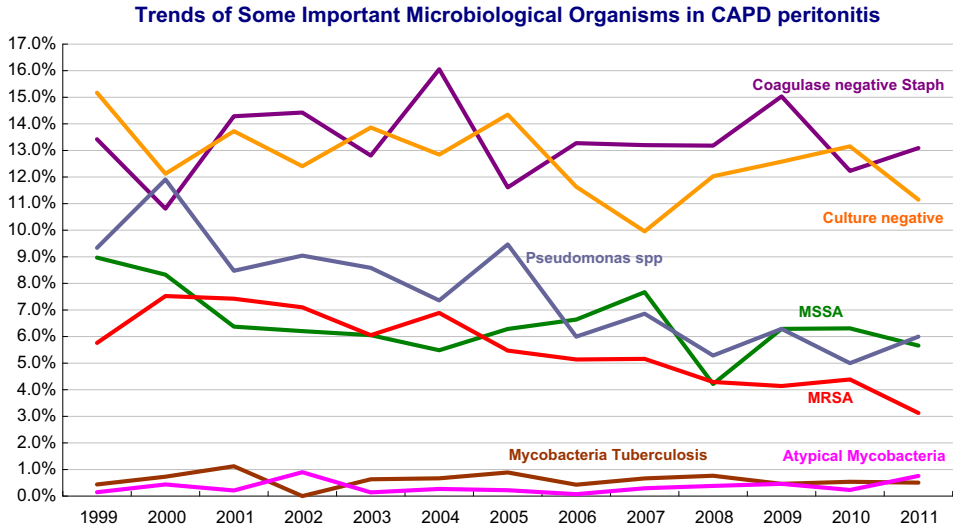


Figure 27 Common microorganisms involved in continuous ambulatory peritoneal dialysis peritonitis, 1999—2011. MRSA = methicillin-resistant *Staphylococcus aureus*; MSSA = methicillin-sensitive *S. aureus*.

malignancies were increasing as a cause of death among RRT patients (Fig. 21).

As for patient survivals, the overall 1 year cumulative patient survival for patients who commenced PD treatment from January 1, 1995 to September 30, 2009, was 91.1%; meanwhile, for 3 years, 5 years, and 10 years patient survival, this rate was 69.6%, 50.7%, and 26.7%, respectively, with a median survival time of 5.1 years (Fig. 22). When we compared the two groups of patients—those who commenced PD treatment between 1997 and 2001 (97—01) and those who commenced treatment from 2002 to 2006 (02—06)—the overall patient survival in the 97-01 group was better with a 5-year survival rate of 52%, whereas the 5-year survival rate for the 02-06 group was 48.4% ($p = 0.001$) (Fig. 23). There were demographic differences between the two groups, with a higher median age as well as a higher percentage of diabetes or hypertension as the primary etiology of ESRD in the 02-06 group.

When we examined the percentage of patients who commenced PD treatment between 2002 and 2006 ($n = 3858$) and stratified them by age at commencement, we noted that 31.3% ($n = 1209$) were still on PD after 5 years.

For the 45—64 age group, 36.4% of patients were still on PD 5 years later, whereas the Figures for the 65—74 and 75+ age groups were 28% and 19.4%, respectively (Fig. 24).

Of the 3573 prevalent PD patients on December 31, 2011, 109 (3.1%) had been on PD treatment for 10 years or

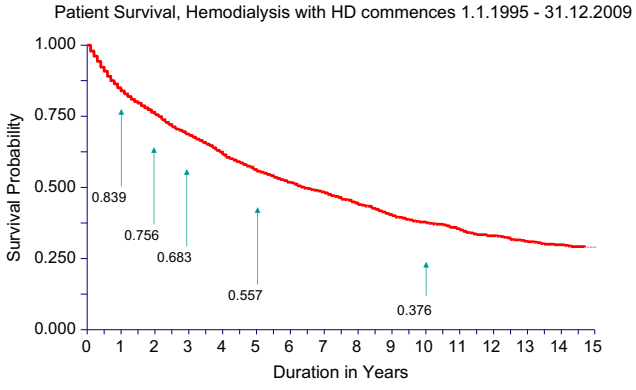


Figure 28 Hemodialysis (HD) patient survival, 1995—2009.

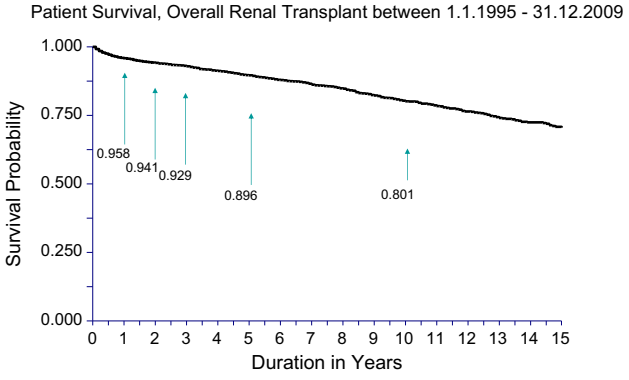


Figure 29 Overall renal transplant patient survival, 1995—2011.

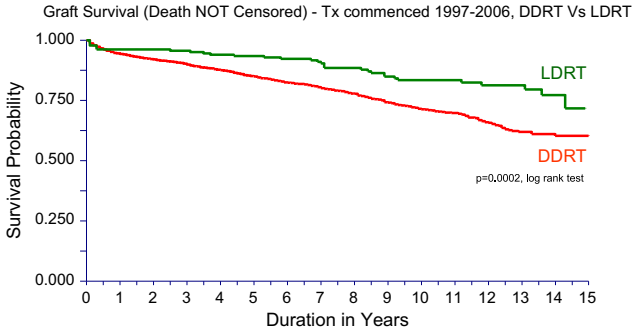


Figure 30 Graft survival, death not censored, living donor renal transplantation (LDRT) vs. deceased donor renal transplantation (DDRT), 1997—2006.

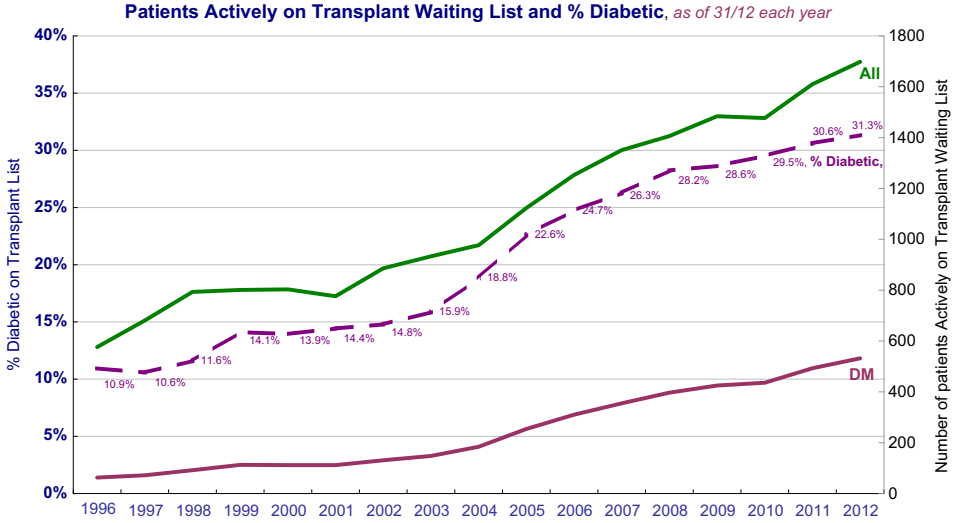


Figure 31 Trends in number of patients actively on transplant waiting list, as of December 31 of each year, and trends in the percentage of diabetic patients on the waiting list. All = all dialysis patients on waiting list; DM = diabetes mellitus.

more. Of these 109 patients, 24 patients (0.7% of prevalent PD patients) were on PD for 15—20 years and two patients were on PD for more than 20 years.

The overall peritonitis rates for CAPD had improved from 22 patient-months per episode in 1999 to 35.8 patient-months per episode in 2011. There were variations in the peritonitis rates between different dialysis systems, and the trends from 1999 to 2011 are presented in Fig. 25. In the year 2011, patients on nocturnal intermittent peritoneal dialysis performed best, with a peritonitis rate of 64.5 patient-months per episode (Fig. 25).

The pattern of microorganisms for CAPD peritonitis remained relatively constant, although there was a gradual increase in the proportion of patients with Gram-positive microorganisms and a decreasing trend for culture negative peritonitis. There were 48.2% Gram-positive organisms,

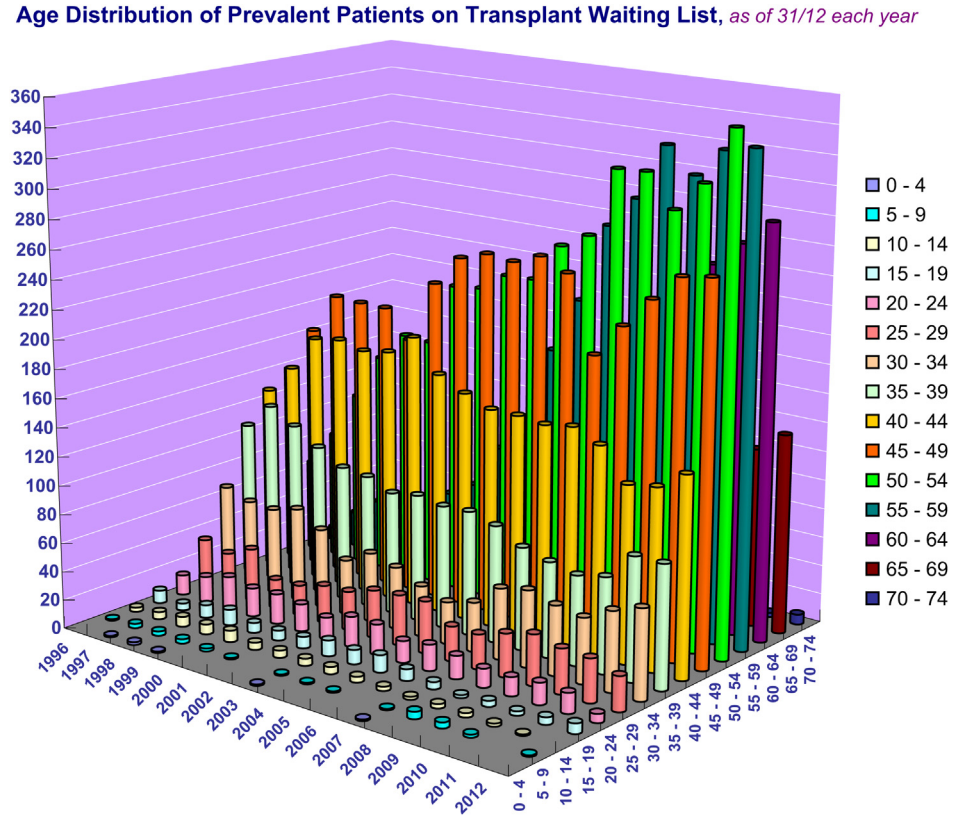


Figure 32 Work status of all adult renal replacement therapy patients, 1999—2011.

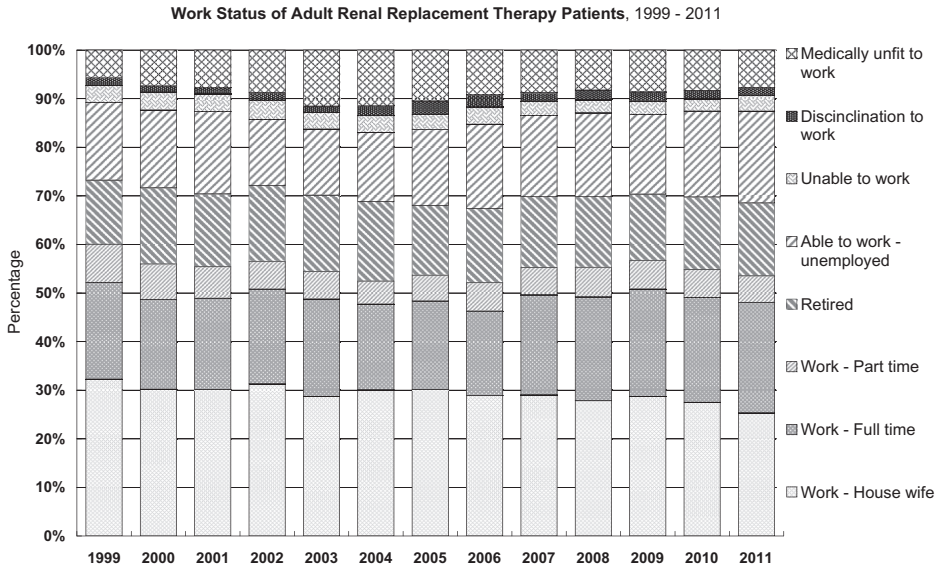


Figure 33 Trends in number of patients actively on transplant waiting list, as of December 31 of each year, age stratified.

35.8% Gram-negative organisms, and 11.1% culture negative in the year 2011 (Fig. 26). On closer examination of several common organisms, decreasing trends were noted in the proportion of methicillin-resistant *Staphylococcus* and *Pseudomonas* spp. (Fig. 27).

For patients who commenced HD between 1995 and 2011 (both HD as initial RRT as well as commencement of HD after PD failure were included), an overall 1 year cumulative patient survival rate of 83.9%, 3 years patient survival of 68.3%, and 5 years patient survival rate of 55.7% were noted, with a median survival time of 6.4 years (Fig. 28).

For patients who received DDRTs in Hong Kong between 1995 and 2009, the 1 year, 3 years, 5 years, and 10 years patient survival rates were 95.8%, 92.9%, 89.6%, and 80.1%, respectively (Fig. 29). The corresponding graft survivals (death not censored) were 94.1%, 90.2%, 85.3%, and 72.2%, respectively. When graft survivals (death not censored) of LDRT were compared with survivals of DDRT, LDRT was significantly better ($p = 0.0002$, log rank test) with a 1st year graft survival of 96.2%, 3 years graft survival of 95.6%, 5 years graft survival of 93.5%, and 10 years graft survival of 83.5% (Fig. 30). The 5 years patient survival for LDRT was 95.5% and the 10 years patient survival was 91.7%, which are significantly better compared with the corresponding rates of patients on DDRT ($p = 0.000$, log rank test).

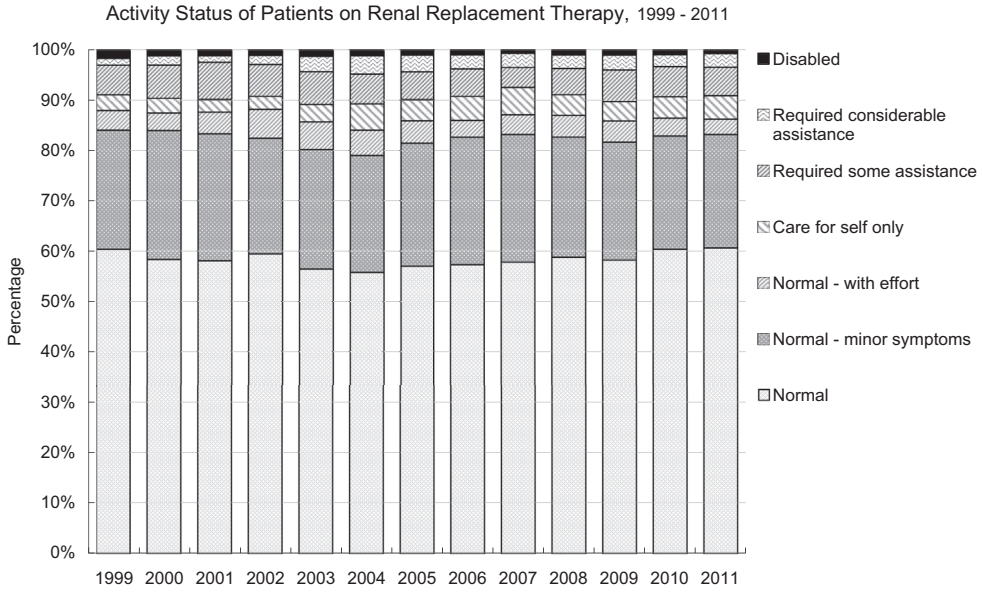


Figure 34 Daily activities of living status of all adult renal replacement therapy patients, 1999—2011.

Transplant waiting list

The number of patients actively on the transplant waiting list increased steadily throughout the years, from 576 patients on December 31, 1996 to 1698 patients on December 31, 2012. The proportion of diabetic patients on the list increased from 10.9% in 1996 to 31.3% in 2012 (Fig. 31). On age stratification, there is an increasing trend in older dialysis patients put on transplant waiting list (Fig. 32).

The percentage of patients on the active waiting list who were hepatitis B surface antigen (HBsAg) positive ranged between 8.5% and 10.8% from 1996 to 2012. The percentage of HBsAg-positive patients actively on transplant waiting list on December 31, 2011 and December 31, 2012 were 10.2% and 10.8%, respectively. The proportion coincides with the prevalence of HBsAg-positive patients among dialysis patients.

Rehabilitation

Work and daily activity status were recorded in the Renal Registry. Based on records in the past 13 years, about 70% of our patients were either working full time, working part time, playing the role of a housewife, or retired. Disinclination to work and absence from school were a minority (Fig. 33). More than 80% of patients had normal activities. Less than 10% of patients required assistance in their activities in daily living (Fig. 34).

Discussion

The PD First policy in Hong Kong was started in 1985 and has since been maintained. This had allowed a high prevalent rate of RRTs in the population. The number of patients who started on PD had declined in the year 2009 but resumed a rising trend since the year 2010. The number of patients on HD was increasing, secondary to the increase in the timely switching of PD failure patients to HD treatment. The number of transplant, especially those performed overseas, had decreased, and the increase in prevalence of dialysis patients overtook the increase in transplant patients. The mean/median age of dialysis patients as well as the prevalence of diabetes patients increased. Diabetes was the major principle diagnosis of ESRD leading to RRTs, and the increasing trend continued. The future goal of the medical and nephrology community will be the better management of diabetic patients and the prevention of renal failure. The number of LDRTs as well as DDRTs performed in Hong Kong remained low; further awareness in organ donation and in the procurement of living kidney donors is required.

The overall survival of RRT patients in Hong Kong is comparable with that found in other parts of the world, and the PD First policy did not have trade-offs in patient survivals.

Note

It is also important to note that all data presented in this report are subject to change based on future data submissions or corrections. Analytical conventions used in this report may vary from previously published reports. Discrepancies from previously published reports may reflect database updates and/or differences in analytical approaches.

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